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15:377649616,-1224047305,377658685,
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The converted TMPs are compressed data structure used to recognize the accurate and real-time traffic pattern for a stream of massive traffic data at run time.

FIG. 8 is an example traffic flow illustrating two different zoom levels using adjusted TMP locations.

Traffic Information Direction Filtering Process

As illustrated in FIG. 9, the server 120 can filter out traffic information based on direction traveled. For example, when a commuter travels north, the server 120 can filter out traffic information for eastbound, westbound, and southbound traffic.

FIG. 10 is an illustration of the overall system showing the mobile device 105 with a client application 108 loaded therein communicating with the system server 120 via a WAN 115. The mobile device 105 uploads speed/location data 108 to a traffic processor program 415 located in or coupled to the server 120. The traffic processor program 415 then uses a TMP database containing predetermined TMPs to build a Distribution Traffic Data Store database 425.

Also shown in FIG. 10 is a traffic request 160 shown being sent from the mobile device 105 to the server 120. In the traffic request, the boundary data and the zoom level are provided. The TRP software program 125 then processes the traffic request 160 and determines the TMP's within the request's boundary identifier and the zoom level. The applicable average speed data associated with the TMPs is then sent to the mobile device 105.

As discussed above, the user may determine the zoom level and thereby controls the amount of traffic data sent to the user's mobile device.

Also, the user may attach a filter command to the traffic request limiting the traffic data along a future area to be travelled or to be monitored.

Additional Feature Set

Based on its knowledge of detailed, accurate, real-time traffic information, in various embodiments, GreenTraffic system 100 may also provide some or all of the following additional features:

BestRoute—My best route based on actual segment speeds

CommuteTime—How long my commute will be, based on real time local traffic

LaunchTime—When to leave based on my calendar and current traffic information

SavingTracker—Show how much Co2, Time, and Money saved by taking an alternative route

HelpMe Tracker—Emergency tracking system for when voice channel is full

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Although specific embodiments have been illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a whole variety of alternate and/or equivalent implementations may be substituted for the specific embodiments shown and described without departing from the scope of the present invention. This application is intended to cover any adaptations or variations of the embodiments discussed herein.

In compliance with the statute, the invention described herein has been described in language more or less specific as to structural features. It should be understood, however, that the invention is not limited to the specific features shown, since the means and construction shown is comprised only of the preferred embodiments for putting the invention into effect. The invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the amended claims, appropriately interpreted in accordance with the doctrine of equivalents.

I claim:

1. A system for collecting information on traffic conditions, the system comprising: a traffic server for receiving speed, direction and location data from a plurality of GPS enabled mobile devices operating in traffic monitored region; a plurality of GPS enabled mobile devices used to send current speed, current direction, and current location data to said server; a traffic monitoring point database coupled to said server containing a plurality of traffic monitoring points in region; and, a traffic pattern recognition software program loaded into said server used to filter valid speed, direction and location data from invalid speed and location data uploaded from said mobile devices using a filter chain process that uses a speed check step, a coarse boundary check step, a bearing check step and an accurate boundary check step, said traffic pattern recognition software program stores speed data from valid speed/location data into a Distributed Traffic Data Store database containing the traffic monitoring point associated with said speed, direction and location data from said mobile devices and disregard invalid speed, direction and location data from said mobile devices.

2. The system as recited in claim 1, wherein said speed and location data is uploaded from said mobile devices at time intervals determined by the mobile device.

3. The system as recited in claim 1, wherein said speed and location data is uploaded from said mobile devices at time intervals determined by said server.

4. The system as recited in claim 1, further including a traffic request from said mobile device to said server requesting valid traffic data.

5. The system as recited in claim 1, wherein said traffic request includes a traffic map zoom level, a traffic map display boundary information so that only traffic monitoring points in said Distributed Traffic Data Store database and associated with said traffic monitor points within said traffic map display boundary are sent to said mobile device.

6. The system as recited in claim 1, further including said server being configured to process a traffic request from said mobile device to said server requesting valid traffic data.

7. The system as recited in claim 6, wherein said traffic request includes a traffic map display boundary so that only traffic monitoring points in said Distributed Traffic Data Store database and associated with said traffic monitor points within said boundary identifier are sent to said mobile device.

8. The system as recited in claim 7, wherein said speed, direction and location data is uploaded from said mobile devices at time intervals determined by said server.